REMARKS

Claim rejections under 35 U.S.C. 103(a) as being unpatentable over Kummer

Claims 1-20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kummer et al. ("Kummer") (U.S. Patent No. 4,777,285) as indicated at pages 2-4 of the Office Action. Applicants respectfully traverse the rejections. Reconsideration and withdrawal of the rejections are respectfully requested in view of the remarks.

Applicants have previously discussed Kummer in Applicants' Amendment and Response under 37 CFR 1.111 filed April 24, 2008 and Applicants incorporate such discussion herein at this point by reference.

The Office Action at page 3 indicates that it would be obvious in the optimization process to optimize the distillation step and the molar ratio, particularly since Kummer et al. teaches a continuous reaction and a distillation step in which the starting material is recycled to the reaction.

The Office Action at page 3 further indicates that in reference to the limitation for gamma valerolactone, in which n is 2 versus 3, it is the position of the Examiner that one of ordinary skill in the art, at the time of the invention, would through routine and normal experimentation determine the appropriate carbon chain length for the lactone.

The Office Action at page 4 further indicates that therefore, it would be prima facie obvious to one of ordinary skill in the art at the time of the invention, to use the adjacent homolog of Kummer et al.'s lactone, which is one CH_2 group from Applicant's gamma valerolactone.

Applicants respectfully traverse the Office Action statements. Applicants suggest that the Office Action rationale is based on improper hindsight.

Applicants suggest that a person skilled in the art would have to conduct at least two modifications of Kummer, i.e., the choice of the lactone as well as the use of a different reaction scheme, e.g., where the amount of alcohol-to-lactone may be controlled through the distillation conditions.

Applicants also suggest that since Kummer does not disclose Applicants' feed or the use of continuous distillation, one skilled in the art would not have an indication of how to arrive at Applicants' process.

Applicants also suggest that Kummer column 1, lines 60-62, discloses that the molar ratio of the lactone of the formula II to the alkanol is advantageously from 1:0.5 to 1:10, in particular from 1:1 to 1:5. Although Kummer does not disclose di-ether formation, Applicants suggest that excess alcohol may be converted into, for example, a di-ether, separation of which may require a fractional distillation.

Regarding di-ether formation, Applicants suggest that one should consider the EXAMPLES disclosed in Applicants' publication of the patent application, US 2007/0142664 A1, at paragraphs [0040] - [0045] and the Table at page 4. Paragraph [0043] indicates that Examples 1-4, 6-9, and 13 are examples according to the invention; examples 5, 10-12, and 14 are comparative examples. In the Examples 1-4 and 6-14, only a negligible amount (<<1% of the amount of alcohol supplied to the process) of di-ether (di-ethyl ether in example 13; di-methyl ether in the other examples) was formed. Paragraph [0045] indicates that the liquid reaction mixture obtained after the experiment in EXAMPLE 5 (no distillation) contained 50 g unconverted gamma valerolactone, 2.5 g methyl pentenoate, 2.4 g of heavy products, methanol and a significant amount of di-methyl ether.

Applicants disclose a process for the preparation of an alkyl alkenoate from a lactone where, for example, a separate fractional distillation may be avoided and where the amount of di-ether formed may be reduced.

CONCLUSION

Applicants respectfully request reconsideration and withdrawal of the claim rejections under 35 U.S.C. 103(a). Applicants further respectfully request entry and consideration of the above remarks to advance the above-identified application to allowance.

Respectfully submitted,

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